



Methods: We performed a cost-effectiveness analysis comparing SE and ilio-femoral PS with a baseline strategy of nonsupervised exercise (NSE). Estimates for costs and outcomes were obtained from the medical literature (Table) and the Bureau of Labor Statistics. Costs were adjusted to 2012 US Dollars. Effectiveness was measured as the maximum walking distance (MWD) in meters by treadmill testing performed at 1-year. The primary endpoint was cost-effectiveness measured in dollars per meter walked. Because of a 1-year time horizon, discounting was not used.

Results: The average cost-effectiveness of NSE/SE/PS in dollars per meter walked was 15.4/19.8/51.6, respectively. When compared with NSE, the incremental cost-effectiveness ratio for SE was \$24.96/m. For PS, it was \$81.1/m. One-way sensitivity analyses (Table, Column 3) demonstrated that SE was a robust strategy in that it was more cost-effective than PS in all scenarios. PS was both more costly and less effective (ie, dominated) if $MWD_{PS} < 207$ m or $MWD_{SE} > 424$ m.

Conclusion: When compared with NSE, SE is a more cost-effective strategy than PS for the treatment of iliofemoral disease in IC.

Determinants of Amputation-Free Survival After Peripheral Vascular Intervention for Critical Limb Ischemia

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Objectives: Our objective was to identify independent predictors of overall (OS) and amputation-free survival (AFS) in patients undergoing peripheral vascular intervention (PVI) for critical limb ischemia (CLI).

Methods: We reviewed 1253 patients who underwent 1414 PVI for CLI within the Vascular Study Group of New England (VSGNE) from January 2010 to December 2011. A univariate screen of potential predictors of the primary (AFS) and secondary (OS) end points was performed to construct a Cox proportional hazards model of survival at 1 year.

Results: All PVI were performed for CLI (rest pain 29%, tissue loss 71%). During each procedure, the number of arteries treated were one (49%), two (35%), three (12%) and >four (5%). Target arterial segments and TASC classifications were aorto-iliac (27%; A 49%, B 25%, C 11%, D 15%), femoral-popliteal (48%; A 30%, B 33%, C 20%, D 17%) and infrapopliteal (25%; A 17%, B 15%, C 27%, D 41%). Technical success was high (92%), while complication rates were low (access site hematoma [5.0%] or occlusion [0.3%], distal embolization [2.4%]). Mortality and major amputation rates were 2.8% and 2.2% at 30 days, respectively. Overall percutaneous or open reintervention rate was 8.0% at 1 year. The Kaplan-Meier estimates of 1-year OS and AFS were 82% and 76%, respectively. Independent predictors of AFS included male gender, age >80 years, dependent living status,

congestive heart failure, dialysis dependence, and tissue loss; smoking was protective (Table).

Conclusions: AFS after PVI for CLI is associated with specific preoperative patient characteristics. This data may facilitate efforts to improve patient selection and, after further validation, enable risk-adjusted outcome reporting for CLI patients undergoing PVI.

Table. Multivariate analysis of factors associated with 1-year AFS after PVI (N = 771)

Preoperative characteristic	Hazard ratio	95% Confidence interval	P value
Dialysis	2.9	2.0-4.2	<.01
Tissue loss	1.8	1.2-2.7	<.01
Dependent living status	1.8	1.1-2.9	.02
Male gender	1.6	1.2-2.1	.01
Congestive heart failure	1.5	1.2-2.0	<.01
Age >80 years	1.4	1.0-1.9	.049
Smoking (prior or current)	0.6	0.5-0.9	<.01

AFS, Amputation-free survival; PVI, peripheral vascular intervention.

Predictors of Increased Length of Stay Following Endovascular AAA Repair

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Objectives: Increased length of stay (LOS) following abdominal aortic aneurysm (AAA) repair increases costs of care and serves as an important quality metric. We sought to identify patient and procedural factors associated with increased postoperative LOS following endovascular aneurysm repair (EVAR).

Methods: All consecutive EVAR patients from a single institution (1/2010-10/2012) were evaluated for increased LOS, defined as >2 days. Predictors of increased LOS were identified by univariate and multivariate analysis.

Results: We identified 257 EVAR patients. Increased LOS was observed in 63% of patients. Univariate analysis showed that patients with increased LOS were older (78 ± 10 vs 73 ± 8 years; $P < .01$), female (27% vs 14%; $P = .01$), smokers (88% vs 77%; $P = .03$), had coronary artery disease (35% vs 18%; $P < .01$), chronic obstructive pulmonary disease (36% vs 13%; $P < .01$), prior AAA repair (11% vs 3%; $P = .04$), elevated creatinine >1.5 mg/dL (16% vs 7%; $P = .05$), and larger AAA (59 ± 13 mm vs 54 ± 8 mm; $P < .01$). They were more likely to have general anesthesia (59% vs 44%; $P = .03$), longer operating room time (190 ± 80 vs 130 ± 40 minutes; $P < .01$), receive more volume (1960 ± 980 vs 1670 ± 780 mL; $P = .02$), and have higher estimated blood loss (330 ± 320 vs 190 ± 140 mL; $P < .01$). Patients staying >2 days were more likely to require vasopressors (11% vs 3.4%; $P = .05$), intensive care unit stay (20% vs 1%; $P < .01$), and return to the operating room (5% vs 0%; $P = .03$). Despite these differences, risk adjusted independent predictors of increased LOS following EVAR included symptomatic coronary artery disease (odds ratio [OR] 2.3; 95% confidence interval [CI], 1.2-4.7; $P = .01$), chronic obstructive pulmonary disease (OR, 3.4; 95% CI, 1.4-7.9; $P < .01$), procedure time (per minute; OR, 1.02; 95% CI, 1.01-1.03; $P < .01$), age (per year; OR, 1.04; 95% CI, 1.01-1.09; $P = .01$), while preoperative statin use (OR, 0.29; 95% CI, 0.1-0.6; $P < .01$), and discharge to home (OR, 0.07; 95% CI, 0.01-0.48; $P < .01$) was protective. Chi-Pi analysis showed that both procedure time (33%) and disposition (26%) combined accounted for more than half of the increased LOS.

Conclusions: These data highlight clinical and technical variables associated with increased LOS following EVAR and may be utilized to enact process improvement measures to improve patient care and reduce hospital costs.

Are Meta-Analyses and Systematic Reviews in Vascular Surgery Reliable?

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Objectives: Meta-analyses (MAs) and systematic reviews (SRs) are considered the highest level of evidence by the Oxford Centre for Evidence-Based Medicine. The evidence-based minimum set of "Preferred Reporting Items for Systematic Reviews and Meta-Analyses" (PRISMA) was introduced in 2009. The objective of this protocol-driven study was to evaluate the quality of MAs and SRs published in the Journal of Vascular Surgery.